

Exhibit 31

Part 2

LONG ALDRIDGE
& NORMAN^{LLP}
ATTORNEYS AT LAW

701 PENNSYLVANIA AVENUE, N.W. • SUITE 600
WASHINGTON, D.C. 20004
202 624-1200 • FACSIMILE 202 624-1298

ATLANTA, GA OFFICE
303 PEACHTREE STREET • SUITE 5300
ATLANTA, GA 30308
404 527-4000 • FACSIMILE 404 527-4198



CERTIFICATE OF MAILING

37 C.F.R. §1.8

I hereby certify that this paper is being deposited with the U.S. Postal Service as First-Class Mail, postage prepaid, in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on the date shown below:

Date

Susan F. Mahon

DOCKET NO.8733.20067

ATTENTION: APPLICATION BRANCH

**THIS IS A RESPONSE TO A
NOTICE TO FILE MISSING PARTS OF APPLICATION**

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

Re: Inventor: Young Woo CHO, et al
Serial No: 09/437,222
Filed: November 10, 1999
For: Portable Computer and Method for Mounting a Flat Panel Display Device Module

SIR:

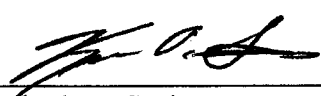
Attached hereto for filing are the following papers:

Copy of Notice to File Missing Parts of Application
Request for Extension of Time
Filing of Declaration Under 37 CFR 1.53(f) and executed Declaration, Power of Attorney & Petition
Assignment and Assignment Recordation Cover Sheet
Request for Corrected Official Filing Receipt and copy of Official Filing Receipt

Our check in the amount of \$ 150.00 is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R. §1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 50-0911. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. §1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

LONG ALDRIDGE & NORMAN LLP


Kenneth D. Springer
Registration No.: 38,943



#2

CERTIFIC. MAILING
37 C.F.R. §1.8
I hereby certify that this paper is being deposited with the U.S. Postal Service as First Class Mail, postage prepaid, in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on the date shown below:
Date Susan F. Mahon

Docket No. 8733.20067

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Young Woo CHO, et al.

SERIAL NUMBER: 09/437,222

ATTN: APPLICATION BRANCH

FILING DATE: November 10, 1999

FOR: Portable Computer and Method for Mounting a Flat Panel Display Device Module

FILING OF DECLARATION UNDER 37 CFR 1.53(f)

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

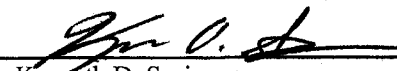
Responsive to the notification dated December 9, 1999, and in accordance with the provisions of 37 CFR 1.53(f), Applicants submit herewith a Rule 63 Declaration.

The required fee was paid at the time of filing the application.

In light of the foregoing, this application is deemed to be in proper condition for examination and such favorable action is earnestly solicited.

Respectfully Submitted,

LONG ALDRIDGE & NORMAN LLP


Kenneth D. Springer
Attorney of Record
Registration No. 39,843

701 Pennsylvania Avenue, N.W.
6th Floor
Washington, D.C. 20004
Telephone: (202) 624-1200
Facsimile: (202) 624-1298

Docket No. 8733.20067

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Young Woo CHO, et al.

FILING DATE: November 10, 1999

FOR: Portable Computer and Method for Mounting a Flat Panel Display Device Module

LIST OF INVENTORS' NAMES AND ADDRESSES

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

Listed below are the names and addresses of the inventors for the above-identified patent application.

Young Woo CHO
215-704 Jukong2dnaji,
Jaekoong-dong
Kunpo, Kyonggi-do, KOREA

Jong Whan KIM
304-1505 Mukoongwha-Apt.
1057 Hogle-dong, Tongan-ku
Anyang, Kyonggi-do, KOREA

Dae Hee PARK
1003-1806 Jukong-Apt.
1120 Sanbon-dong
Kunpo, Kyonggi-do, KOREA

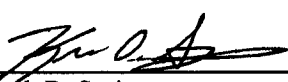
A declaration containing all the necessary information will be submitted at a later date.

Respectfully Submitted,

Date: November 10, 1999

LONG ALDRIDGE NORMAN LLP

Sixth Floor
701 Pennsylvania Avenue, N.W.
Washington, D.C. 20004
Tel. (202) 624-1200
Fax. (202) 624-1298


Kenneth D. Springer
Registration No. 39,843



UNITED STATES DEPARTMENT OF COMMERCE Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

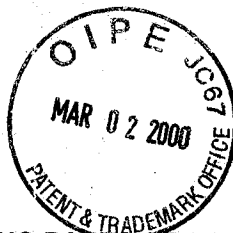
APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO./TITLE
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024071201 11/10/99

8733-20067

024071201

NOT ASSIGNED



2871

DATE MAILED: 12/09/99

NOTICE TO FILE MISSING PARTS OF APPLICATION Filing Date Granted

Dec Due: 2/9/2000

An Application Number and Filing Date have been assigned to this application. The items indicated below, however, are missing. Applicant is given TWO MONTHS FROM THE DATE OF THIS NOTICE within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a). If any of items 1 or 3 through 5 are indicated as missing, the SURCHARGE set forth in 37 CFR 1.16(e) of ☐ \$65.00 for a small entity in compliance with 37 CFR 1.27, or ☐ \$130.00 for a non-small entity, must also be timely submitted in reply to this NOTICE to avoid abandonment.

If all required items on this form are filed within the period set above, the total amount owed by applicant as a ☐ small entity (statement filed) ☐ non-small entity is \$_____.

- ☐ 1. The statutory basic filing fee is:
- ☐ missing.
 - ☐ insufficient.

Applicant must submit \$_____ to complete the basic filing fee and/or file a small entity statement claiming such status (37 CFR 1.27).

- ☐ 2. The following additional claims fees are due:

\$_____ for _____ total claims over 20.

\$_____ for _____ independent claims over 3.

\$_____ for multiple dependent claim surcharge.

Applicant must either submit the additional claim fees or cancel additional claims for which fees are due.

- ☐ 3. The oath or declaration:

- ☐ is missing or unsigned.
- ☐ does not cover the newly submitted items.

An oath or declaration in compliance with 37 CFR 1.63, including residence information and identifying the application by the above Application Number and Filing Date is required.

- ☐ 4. The signature(s) to the oath or declaration is/are by a person other than inventor or person qualified under 37 CFR 1.42, 1.43 or 1.47.

A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.

- ☐ 5. The signature of the following joint inventor(s) is missing from the oath or declaration:

An oath or declaration in compliance with 37 CFR 1.63 listing the names of all inventors and signed by the omitted inventor(s), identifying this application by the above Application Number and Filing Date, is required.

- ☐ 6. A \$50.00 processing fee is required since your check was returned without payment (37 CFR 1.21(m)).

- ☐ 7. Your filing receipt was mailed in error because your check was returned without payment.

- ☐ 8. The application was filed in a language other than English.

Applicant must file a verified English translation of the application, the \$130.00 set forth in 37 CFR 1.17(k), unless previously submitted, and a statement that the translation is accurate (37 CFR 1.52(d)).

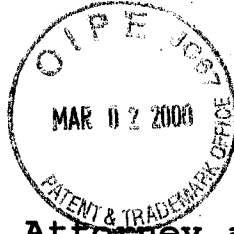
- ☐ 9. OTHER: _____

Direct the reply and any questions about this notice to "Attention: Box Missing Parts."

A copy of this notice MUST be returned with the reply.

Customer Service Center
Initial Patent Examination Division (703) 308-1202

Docket No.: 8733.20067



#3 Page 1

Declaration, Power of Attorney and Petition

WE (I) the undersigned inventor(s), hereby declare(s) that:

My residence, post office address and citizenship are as stated below next to my name,

We (I) believe that we are (I am) the original, first, and joint (sole) inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Portable Computer And Method For Mounting a Flat Panel Display Device Module

the specification of which

is attached hereto.

- ☒ was filed on November 10, 1999

As Application Serial No. 09/437,222

And amended on

- ☐ was filed as PCT international application

Number

on

and was amended under PCT Article 19

on

(if applicable).

We (I) hereby state that we (I) have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

We (I) acknowledge the duty to disclose information known to be material to the patentability of this application as defined in Section 1.56 of Title 37 Code of Federal Regulations.

We (I) hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed. Prior Foreign Application(s)

Application No.	Country	Day/Month/Year	Priority Claimed	
1998-48265	Korea	November 11, 1998	<input checked="" type="checkbox"/> Yes	No
			Yes	No
			Yes	No

Page 2

We (I) hereby claim the benefit under Title 35, United States Code, 119(e) of any United States provisional application(s) listed below.

_____	_____
(Application Number)	(Filing Date)
_____	_____
(Application Number)	(Filing Date)

We (I) hereby claim the benefit under 35 U.S.C. 120 of any United States application(s), or 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

Application Serial No.	Filing Date	Status (pending, patented, abandoned)
_____	_____	_____
_____	_____	_____

And we (I) hereby appoint Steven B. Kelber, Reg. No. 30,073; Marc R. Labgold, Ph.D., Reg. No. 34,651; Song K. Jung, Reg. No. 35,210; Sharon E. Crane, Ph.D., Reg. No. 36,113; Laura A. Donnelly, Reg. No. 38,435; Catherine Bax Richardson, Reg. No. 39,007; Kenneth D. Springer, Reg. No. 39,843; Russell O. Paige, Reg. No. 40,758; James M. Heintz, Reg. No. 41,828, Laura D. Nammo, Reg. No. 42,024 and Amy L. Miller, Reg. No. 43,804 and as our (my) attorneys, with full powers of substitution and revocation, to prosecute this application and to transact all business in the Patent Office connected therewith; and we (I) hereby request that all correspondence regarding this application be sent to Steven B. Kelber of Long Aldridge & Norman LLP, Attorneys At Law, 6th Floor, 701 Pennsylvania Avenue, N.W., Washington, D.C. 20004.

We (I) declare that all statements made herein of our (my) own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Young Woo CHO	Residence: 215-704 Jukong2dnaji,
NAME OF FIRST SOLE INVENTOR	Jaekoong-dong, Kunpo, Kyonggi-do, KOREA
<u>Young Woo Cho</u>	Citizen of: Korea
Signature of Inventor	Post Office Address: Same As Above
Feb. 18, 2000	
Date	

Jong Hwan KIM

NAME OF SECOND JOINT INVENTOR

Jonghwan KIM
Signature of Inventor

Feb. 18 2000

Date

Dae Hee PARK

NAME OF THIRD JOINT INVENTOR

Dae Hee Park.
Signature of Inventor

Feb. 18 2000

Date

Residence:

304-1505 Mukoongwha-Apt. 1057

Hogye-dong, Tongan-ku Anyang, Kyonggi-do,
KOREA

Citizen of: Korea

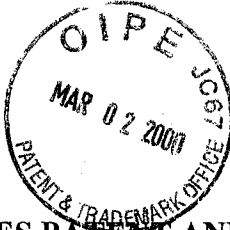
Post Office Address: Same As Above

Residence: 1003-1806 Jukong-Apt. 1120

Sanbon-dong, Kunpo, Kyonggi-do, KOREA

Citizen of: Korea

Post Office Address: Same As Above



#4

Docket No. 8733.20067

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Young Woo CHO, et al

GAU: 2871

SERIAL NO: 09/437,222

EXAMINER: To Be Assigned

FILED: November 10, 1999

FOR: Portable Computer and Method for Mounting a Flat Panel Display Device Module

REQUEST FOR EXTENSION OF TIME
UNDER 37 C.F.R. 1.136

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:


It is hereby requested that a one month extension of time be granted to **March 9, 2000** for

- ☐ filing a response to the Official Action dated:
- ☐ responding to the requirements in the Notice of Allowability dated:
- ☐ filing the Formal Drawings. The Issue Fee due has been timely filed.
- ☒ responding to the Notice to File Missing Parts of Application dated: December 9, 1999
- ☐ filing a Notice of Appeal. A timely response to the final rejection, due has been filed.
- ☐ filing an Appeal Brief. A Notice of Appeal was filed on:
- ☐

The required fee of **\$110.00** is enclosed herewith by check and any further charges may be made against the Attorney of Record's Deposit Account No. 50-0911. A duplicate copy of this sheet is enclosed.

Respectfully Submitted,


LONG ALDRIDGE & NORMAN LLP


Kenneth D. Springer
Registration No. 39,843

Sixth Floor
701 Pennsylvania Avenue, N.W.
Washington, D.C. 20004
Tel. (202) 624-1200
Fax. (202) 624-1298

03/03/2000 TLWU11 00000075 09437222
01 FC:115 110.00 OP

CERTIFICATE OF MAILING	
37 C.F.R. §1.8	
I hereby certify that this paper is being deposited with the U.S. Postal Service as First-Class Mail, postage prepaid, in an envelope addressed to: Assistant Commissioner for Patents, Washington,, D.C. 20231, on the date shown below:	
Date	Susan F. Mahon

CERTIFICATE 37 C.F.R. I hereby certify that this paper is being deposited with the U.S. Postal Service as First Class Mail, postage prepaid, in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on the date shown below: Date _____ Susan F. Mahon _____	MAILING 
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Docket No. 8733.20067

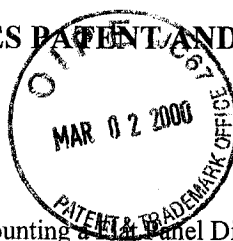
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Young Woo CHO, et al

SERIAL NO: 09/437,222

FILED: November 10, 1999

FOR: Portable Computer and Method for Mounting a Panel Display Device Module



GAU: 2871

EXAMINER: To Be Assigned

REQUEST FOR PRIORITY

 ASSISTANT COMMISSIONER FOR PATENTS
 WASHINGTON, D.C. 20231

SIR:

- ☐ Full benefit of the filing date of U.S. Application Serial Number [], filed [], is claimed pursuant to the provisions of **35 U.S.C. §120**.
- ☐ Full benefit of the filing date of U.S. Provisional Application Serial Number , filed , is claimed pursuant to the provisions of **35 U.S.C. §119(e)**.
- ☒ Applicants claim any right to priority from any earlier filed applications to which they may be entitled pursuant to the provisions of **35 U.S.C. §119**, as noted below.

In the matter of the above-identified application for patent, notice is hereby given that the applicants claim as priority:

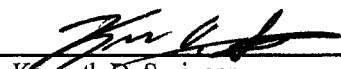
<u>COUNTRY</u>	<u>APPLICATION NUMBER</u>	<u>MONTH/DAY/YEAR</u>
Korea	1998-48265	November 11, 1998

Certified copies of the corresponding Convention Application(s)

- ☒ are submitted herewith
- ☐ will be submitted prior to payment of the Final Fee
- ☐ were filed in prior application Serial No. filed
- ☐ were submitted to the International Bureau in PCT Application Number .
 Receipt of the certified copies by the International Bureau in a timely manner under PCT Rule 17.1(a) has been acknowledged as evidenced by the attached PCT/IB/304.
- ☐ (A) Application Serial No.(s) were filed in prior application Serial No. filed ; and
 (B) Application Serial No.(s)
- ☐ are submitted herewith
- ☐ will be submitted prior to payment of the Final Fee

Respectfully Submitted,

LONG ALDRIDGE & NORMAN LLP


 Kenneth D. Springer

Registration No. 39,843

 Sixth Floor
 701 Pennsylvania Avenue, N.W.
 Washington, D.C. 20004
 Tel. (202) 624-1200
 Fax. (202) 624-1298



대한민국 특허청
KOREAN INDUSTRIAL
PROPERTY OFFICE

별첨 사본은 아래 출원의 원본과 동일함을 증명함.

This is to certify that the following application annexed hereto
is a true copy from the records of the Korean Industrial
Property Office.

출원번호 : 1998년 특허출원 제48265호
Application Number

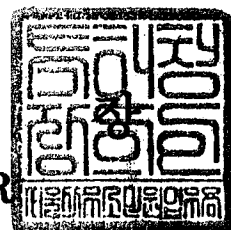
출원년월일 : 1998년 11월 11일
Date of Application

출원인 : 엘지.필립스 엘시디 주식회사
Applicant(s)



1999년 11월 8일

특허청
COMMISSIONER



특허출원서

【출원번호】 98-048265

【출원일자】 1998/11/11

【발명의 국문명칭】 휴대용 컴퓨터와 그 평판표시장치의 결합방법

【발명의 영문명칭】 A PORTABLE COMPUTER AND THE METHOD FOR MOUNTING A FLAT PANEL DISPLAY DEVICE

【출원인】

【국문명칭】 엘지전자 주식회사

【영문명칭】 LG Electronics Inc.

【대표자】 구자홍

【출원인코드】 11006955

【출원인구분】 국내상법상법인

【전화번호】 02-3777-7083

【우편번호】 150-010

【주소】 서울특별시 영등포구 여의도동 20번지

【국적】 KR

【대리인】

【성명】 정원기

【대리인코드】 K199

【전화번호】 02-557-4424

【우편번호】 135-080

【주소】 서울특별시 강남구 역삼동 648-15 신원빌딩 302호

【대리인】

【성명】 이창훈

【대리인코드】 H377

【전화번호】 02-3453-0479

【우편번호】 135-080

【주소】 서울특별시 강남구 역삼동 648-15 신원빌딩 302호

【발명자】

【국문성명】 조영우

【영문성명】 CHO, YOUNG WOO

【주민등록번호】 670102-1090426

【우편번호】 435-055

【주소】 경기도 군포시 재궁동 주공2단지 215-704

【국적】 KR

【발명자】

【국문성명】 김종환

【영문성명】 KIM, JONG HWAN

【주민등록번호】 630408-1715616

【우편번호】 431-080

【주소】 경기도 안양시 동안구 호계동 1057 무궁화아파트 304/1505

【국적】 KR

【발명자】

【국문성명】 박대희

【영문성명】 PARK, DAE HEE

【주민등록번호】 660212-1109011

【우편번호】 435-040

【주소】 경기도 군포시 산본동 1120번지 주공아파트 1003-1806

【국적】 KR

【취지】 특허법 제42조의 규정에 의하여 위와 같이 출원합니다.

대리인

정원기 (인)

대리인

이창훈 (인)

【수신처】 특허청장 귀하

【수수료】

【기본출원료】 20 면 29,000 원

【가산출원료】 12 면 12,000 원

【우선권주장료】 0 건 0 원

【심사청구료】 0 항 0 원

【합계】 41,000 원

【첨부서류】 1. 요약서, 명세서(및 도면) 각 1통

2. 출원서 부분, 요약서, 명세서(및 도면)을 포함하는 FD부분 1통

3. 위임장(및 동 번역문)

【요약서】

【요약】

시스템 본체와;상기 본체의 처리결과를 표시하는 표시부와, 배면을 가진 액정표시장치와;측벽과 내면을 가지고, 상기 액정표시장치를 수용하는 케이스와; 상기 액정표시장치와 본체를 회동가능하게 연결하기 위하여, 힌지마운트와, 상기 힌지마운트에 삽입되어 회동하고, 상기 액정표시장치의 배면과 결합되는 제 1면과, 상기 케이스의 측벽에 결합되는 제 2면을 가진 힌지아암을 구비한 힌지를 포함하는 휴대용 컴퓨터를 개시하고, 다른 예로서, 상기 케이스의 내면과 결합되는 제 1면과, 상기 평판표시장치의 측벽에 결합되는 제 2면을 가진 힌지아암을 또한 개시하고 있고, 이에 따른 휴대용 컴퓨터조립방법을 개시한다.

【대표도】

도 4

【명세서】

【발명의 명칭】

휴대용 컴퓨터와 그 평판표시장치의 결합방법

【도면의 간단한 설명】

도 1은 일반적인 노트북 퍼스날컴퓨터를 도시한 도면,

도 2a는 종래 노트북 퍼스날컴퓨터에서 액정표시장치의 조립구조를 도시한 분해사시도, 도 2b는 액정표시장치가 조립된 상태도,

도 3은 종래 액정표시장치의 측면조립구조를 도시한 사시도,

도 4는 본 발명의 제 1실시에에 따라 액정패널과 배광장치로 구성된 액정표시장치를 도시한 사시도,

도 5는 도 4의 실시예에 따른 액정표시장치를 도시한 배면도,

도 6은 본 발명의 제 1실시에에 따라 휴대용컴퓨터의 액정표시장치의 조립구조를 도시한 분해사시도,

도 7은 본 발명의 제 1실시에의 변형으로 힌지아암의 단면을 "디글자"형상으로 도시한 분해사시도,

도 8은 도 6의 변형으로 힌지아암을 길게 연장하지 않은 액정표시장치를 도시한 사시도,

도 9(a)(b)(c)는 도 6의 힌지아암의 다른 예를도시한 정면도,

도 10은 도 4와 유사한 도면으로 본 발명의 제 2실시에에 따른 액정표시장치의 분해사시도,

도 11은 본 발명의 제 2실시예에 따른 액정표시장치의 조립구조를 도시한 분해사시도,

도 12은 도 9의 변형으로서, 표시장치 케이스와 힌지아암의 결합을 도시한 개략단면도이다.

* 도면의 주요 부분에 대한 부호의 설명 *

10 : 액정표시장치 12 : 액정패널

14 : 배광장치 15 : 고정홈

16 : 고정틀 18 : 결합부재

20 : 힌지아암 27 : 고정돌기

31 : 관통홀

【발명의 상세한 설명】

【발명의 목적】

【발명이 속하는 기술분야 및 그 분야의 종래기술】

본 발명은 휴대용 컴퓨터의 본체와 평판표시장치의 결합구조 및 결합방법에 관한 것이다.

일반적인 노트북이라고도 일컬어지는 휴대용 컴퓨터는 도 1에 도시된 바와 같이, 정보입력장치인 키입력장치(102)가 노출되어 설치되어 있는 한편, 기억장치 및 연산장치(미도시)와 같은 정보처리장치가 내장되어 있는 본체(100)와, 상기 본체(100)와 힌지(124)결합하는 표시장치어셈블리(110)를 포함하고 있고, 표시장치어셈블리(110)는 내부의 평판표시장치(111)가 있으며, 이를 보호하고 수용하는 케이

스(122)를 구비하고 있다.

그리고, 종래의 표시장치어셈블리(110)를 상세히 도시한 도 2(a)와 도 2(b)를 참조하여 설명하면, 평판표시장치(111)로서는 PDP(Plasma display panel)이나 FED(Field emission display)도 가능하나, 일반적으로 액정표시장치가 적용되고 있으며 액정표시장치는 액정패널(112)과 배광장치(미도시)로 이루어져 있고, 액정패널(112)과 배광장치의 가장자리를 따라 지지프레임(114)이 테두리되어 있다.

상기 표시장치케이스(122)는 본체를 수용하는 본체케이스(120)와 힌지결합되어 본체(100)에 표시장치어셈블리(110)가 선택적으로 개폐하도록 되어 있다. 상기 힌지의 힌지마운트(124)는 본체케이스의 상부에 돌출형성되어 있고, 본체케이스(120)와 표시장치케이스(122)는 상기 힌지마운트(124)에 힌지아암(126)을 매개로 연결되어 있다. 따라서, 표시장치어셈블리(110)는 본체케이스(120)에 대해 소정의 각도로 회동가능하도록 되어 있다.

상기 액정표시장치(111)의 지지프레임(114)의 양측면에는 고정편(114a)이 돌출형성되어 있고, 하부모서리부에 결합편(114b)이 형성되어 있는 한편, 표시장치케이스(122)의 내면에 액정표시장치(111)의 고정편(114a)에 결합되도록 다수개의 결합리브(122a)가 형성되어 있다.

액정표시장치(110)의 조립과정은 힌지아암(126)의 선단을 지지프레임(114)의 결합편(114b)에 스크루(128)로써 1차로 고정시키고, 지지프레임(114)의 고정편(114a)과 표시장치케이스(122)의 고정리브(122a)를 위쪽에서 아래쪽으로 스크루(128)로써 체결하여 조립을 완료한다.

그런데, 상기한 액정표시장치어셈블리의 조립구조는 도 2b에 도시된 바와 같이, 액정표시장치(110)에 힌지아암(126)을 설치함으로써 액정표시장치(110)와 표시장치케이스(122)는 힌지아암(126)의 폭 만큼(d_1) 거리가 생기게 된다. 또한, 결합편(114a)이 지지프레임(136)에서 돌출되어 결합편의 폭(d_2)만큼 공간을 차지하게 된다. 결국, 액정패널(112)과 표시장치케이스(122)의 가장자리 사이에는 공간($d_1+d_2=D$)이 생기므로 액정표시장치(110)의 비유효표시영역이 늘어나게 되어 평판표시장치 즉, 액정패널(112)의 표시영역이 줄어드는 문제점이 있다.

이에 상기한 문제점을 해결하기 위한 방안으로 최근에는 평판표시부를 측면에서 조립하는 측면조립방법 및 그 구조를 채택하는 방안이 제시되고 있다.

도 3을 참조하여 액정표시장치의 측면조립구조를 설명하면, 표시장치케이스(122)의 양측면에 1쌍의 체결공(122b)이 형성되어 있다.

액정표시장치(110)에는 액정패널(112)과 배광장치(134)의 가장자리를 따라 지지프레임(136)이 테두리되어 있는 한편, 상기 배광장치(134)의 양측에는 상기 한 쌍의 체결공(122b)과 일치되는 위치에 1쌍의 결합리브(134a)가 돌출형성되어 있고, 상기 지지프레임(136)은 결합리브(134a)부분이 닿지 않도록 그 부분이 절개되거나 결합리브(134a)의 홀에 일치되는 홀이 형성되어 있다.

또한 상기 액정표시장치(110)와 상기 케이스(122)의 측벽사이에는 힌지아암(106)이 위치하고 있고, 이 힌지아암(106)은 상기 케이스(122)의 측벽과 평행한 형상으로서, 상기 액정표시장치(110)의 결합리브(134a)와 케이스의 체결공(122b)과 대응되는 위치에 관통홀(106a)이 형성되어 있다.

이러한 구조를 가진 액정표시장치(110)의 고정방법은 케이스(122)에 액정표시장치(110)를 배치하고, 이때 힌지아암(106)은 액정표시장치(110)와 케이스(122) 사이에 위치하고, 케이스(122)의 측면에 형성된 체결공(122b)와, 힌지아암(106)의 관통홀(106a)과, 액정표시장치의 결합리브(134a)를 스크루(138)로써 체결하여 고정한다.

이러한 액정표시장치(110)의 측면고정방법은 전면고정방법에 비하여 힌지아암(106)을 측면으로 배치하여 비표시영역을 액정패널(112)의 표시영역을 확장하는데 큰 역할을 하고 있다.

【발명이 이루고자 하는 기술적 과제】

본 발명은 상기한 측면고정방법을 이용하면서, 개량하기 위한 것으로, 본 발명의 목적은 내충격성을 향상시킬 수 있는 휴대용 컴퓨터와 그 조립방법을 제공하는 것이다.

본 발명의 다른 목적은 액정표시장치의 기술진보에 따라 두께가 점점 얇아지는 상황에서 스크루가 액정표시장치의 측벽에서 충분히 고정되지 못한 상황에서도 상기한 측면고정방법을 적용할 수 있는 휴대용 컴퓨터와 그 조립방법을 제공하는 것이다.

본 발명의 다른 목적과 장점들은 후술하는 실시예의 설명을 통해 알 수 있을 것이다.

【발명의 구성 및 작용】

상기한 목적을 달성하기 위해 본 발명은 힌지아암을 단면이 "L"자형상으로

구성하고 일면이 케이스와 결합하고, 타면이 평판표시장치와 결합되도록 하고 있다.

본 발명의 하나의 특징에 의하면, 시스템 본체와; 상기 본체의 처리결과를 표시하는 표시부와, 배면을 가진 평판표시장치와; 측벽과 내면을 가지고, 상기 평판표시장치를 수용하는 케이스와; 상기 평판표시장치와 본체를 회동가능하게 연결하기 위하여, 힌지마운트와, 상기 힌지마운트에 삽입되어 회동하고, 상기 평판표시장치의 배면과 결합되는 제 1면과, 상기 케이스의 측벽에 결합되는 제 2면을 가진 힌지아암을 구비한 힌지를 포함하는 휴대용 컴퓨터를 제공한다.

본 발명의 변형된 다른 특징에 의하면, 상기 케이스의 내면과 결합되는 제 1면과, 상기 평판표시장치의 측벽에 결합되는 제 2면을 가진 힌지아암을 포함하는 휴대용 컴퓨터를 제공한다.

본 발명의 또 다른 특징에 의하면, 시스템본체를 구비하는 단계와; 평판표시장치를 구비하는 단계와; 상기 평판표시장치를 수용하기 위하여 측벽을 가진 케이스를 구비하는 단계와; 상기 케이스의 평판표시장치의 배면과 평행한 제 1면과, 상기 케이스의 측벽과 평행한 제 2면을 가진 힌지아암을 구비하는 단계와; 상기 힌지아암이 장착되어 상기 시스템본체와 상기 평판표시장치를 회동시키는 힌지마운트를 구비하는 단계와; 상기 힌지아암의 제 1면과 상기 평판표시장치의 배면을 결합하는 단계와; 상기 힌지아암의 제 2면과 상기 케이스의 측벽을 결합하는 단계를 포함하는 휴대용 컴퓨터 조립방법을 제공한다.

본 발명의 또 다른 특징에 의하면, 상기 힌지아암의 제 1면과 상기 케이스를

내면방향으로 결합하는 단계와; 상기 힌지아암의 제 2면과 상기 평판표시장치의 측벽을 결합하는 단계를 포함하는 휴대용 컴퓨터 조립방법을 제공한다.

본 발명에 적용될 수 있는 평판표시장치로서는 PDP, FED가 있고, 바람직하기로는 액정표시장치이다.

이와 같은 본 발명에 따른 휴대용 컴퓨터와 평판표시장치의 조립방법은, 평판표시장치를 기본적으로 측면에서 결합함으로써 유효표시영역을 최대화 할 수 있고, 또한 케이스의 내면과 힌지아암을 결합함으로써 내충격성을 향상시킬 수 있게 된다.

이하, 본 발명의 바람직한 실시예를 명세서에 첨부된 도면을 참조하여 보다 상세하게 설명한다. 동일 또는 유사한 기능을 하는 부품 및 요소에 대하여는 동일 또는 유사한 부호를 부여한다.

도 4와 도 5는 본 발명의 일실시예에 따른 액정표시장치의 일예를 도시한 분해사시도 및 배면도이다.

도 4에 도시된 바와 같이 액정표시장치(10)는 전면에 형성된 액정패널(12)과, 후면에 부착된 배광장치(14)로 구성된다.

상기 배광장치(14)는 액정패널(12)의 표시영역에 확산시키는 확산 또는 보호시트(14a)와, 광을 소정의 각도로 집광하는 제1,2프리즘시트(14b)(14c), 확산 또는 보호시트(14d), 광을 수평으로 입사받아 수직으로 방사하는 도광판(14e) 및 반사판(14f)로 구성되며, 상기 액정패널(12)과 상기 배광장치(14)는 제 1고정틀(16a)과 제 2고정틀(16b)로 구성된 지지프레임에 의해 지지되고 제 2고정틀(16b)에는 고정

홈(15)이 형성되어 있다.

도 5를 참조하여 설명하면, 액정표시장치(10)의 배면선단을 따라 다수개의 고정홈(15)이 형성되어 있다. 이러한 고정홈(15)들은 배면의 각 모서리에 설치되는 것이 안정된 고정에 바람직하다. 고정홈(15)는 홈 형성을 위한 리브형상일 수도 있고, 배면에 단지 홈형상을 지닐 수도 있다.

도 6는 상기 도 4 및 도 5와 관련하여 설명한 액정표시장치를 본 발명에 따라 힌지결합구조에 적용하기 위한 휴대용 컴퓨터의 액정표시장치의 조립구조를 도시한 일부 분해사시이다.

도 6에 도시된 바와 같이, 본체케이스(50)는 상부에 힌지마운트(40)가 돌출 형성되어 있고, 상기 힌지 마운트(40)에 힌지아암(20)이 삽입설치되어 있다. 즉 상기 힌지아암(20)은 일측이 단면이 원형인 편부(20a)로서 힌지마운트(40)에 삽입되어 있고, 타측은 박편부(20b)로 형성되고, 제 1 면(21)은 액정표시장치(10) 하부배면과 평행하고, 제 2 면(22)은 액정표시장치의 측면과 평행하게 형성되어 단면은 "L"자 형상이다. 여기서 편부(20a)와 박편부(20b)는 별도의 부재가 서로 결합된 형태일 수도 있고, 일체의 부재일 수도 있다.

상기 힌지 아암(20)은 표시장치케이스(30)의 측벽을 따라 연장되고 있으며, 상기 제 1면(21)에는 상기 액정표시장치의 배면에 형성된 고정홈(15)의 위치와 대응되는 위치에 고정돌기(27)가 형성되어있다. 또한 상기 제 2면(22)에는 복수개의 홀(28)이 형성되어 있으며, 이는 표시장치케이스(30)에 형성된 관통홀(31)과 일치한다.

이 실시예에 따라 액정표시장치(10)를 고정하는 방법은 액정표시장치(10)의 배면에 형성된 고정홈(15)을 힌지아암(20)의 제 1면(21)의 고정돌기(27)에 끼워서 고정하고, 케이스(30)의 관통홀(31)과 힌지아암(20)의 제 2면(22)의 홀(28)을 통해 스크루 또는 못과 같은 결합부재(18)를 사용하여 표시장치케이스(30)와 힌지아암을 측방에서 고정한다.

한편, 고정돌기(27)의 형상은 도시한 바와 같이 플라스틱후크 즉, 화스너형상으로 하는 것이 단단한 고정을 위해 바람직하고, 여기에 대응되는 고정홈(15)의 형상도 입구가 내측보다 좁은 형상을 하는 것이 바람직하다.

한편, 내충격성을 보다 향상시키기 위하여, 힌지아암의 단면을 "디글자"자형상으로 한 것이 도 7에 도시되고 있다. 즉, 도 7에서는 도 6의 힌지아암(20)에 제 3면(23)을 형성하여 액정표시장치의 표시부의 가장자리를 지지할 수 있도록 한 것이 특징이다.

한편, 제 6도 및 제 7도에 도시한 이 실시예에서 제 1면(21)과 제 3면(23)이 면형상이지만, 브라켓과 같이 면적이 작은 부재를 제 2면(22)에 결합시켜 사용하는 것도 가능하다.

도 8은 제 1실시예의 또 다른 변형으로 힌지아암을 길게 연장하지 않은 예를 보여주고 있다. 액정표시장치(10)의 배면과 결합되는 제 1면(21)의 형상이 역 F형상을 지니고 있어 긴 힌지아암에 대신하여 짧은 힌지아암으로 고정력을 유지하기 위한 구성이다.

도 9(a)(b)(c) 역시 제 1실시예의 변형으로 힌지아암의 제 1면을 케이스의

내면을 따라 여러 가지 다른 형태의 힌지아암(20a)(20b)(20c)로 각각 구성할 수 있음을 도시하고 있다. 이들 힌지아암은 액정표시장치와 힌지아암사이의 결합력을 보다 높일 수 있는 잇점이 있고, 액정표시장치의 배면 설계에 따라 배치가 자유롭게 될 수 있음을 예시하는 것이다.

본 실시예에서 액정표시장치의 측면으로 스크루와 같은 결합부재를 사용하지 않기 때문에 액정표시장치의 박막화에 따른 기술진보에도 측면고정방법을 적용할 수 있게되어 유효표시영역의 최대화를 이룰 수 있음은 물론, 힌지아암과 표시장치 케이스의 내면과 결합시킴으로써 내충격성이 보다 향상되는 이점이 있다.

도 10은 본 발명의 제 2실시예에 따른 액정표시장치의 분해사시도로서, 도 4와 유사하지만, 액정표시장치의 배면에 결합홈이 형성된 것이 아니라 액정표시장치의 측면에 스크루홀(19)을 형성한 것이 다른 점이다.

도 11는 상기와 같은 본 발명의 제 2실시예에 따른 액정표시장치의 조립구조 및 조립방법을 도시하고 있는 개략 분해사시도이다. 이 실시예의 힌지아암(20) 역시 액정표시장치(10)의 배면과 접하는 제 1면(21)과 액정표시장치의 측면과 접하는 제 2면(22)이 서로 직각을 이루는 단면이 "L"자 형상이다.

이 실시예는 힌지아암(20)의 제 1면(21)이 케이스와 결합되고, 제 2면(22)이 액정표시장치의 측벽과 결합되고 있는 점에서 상기 제 1실시예와 상이하다.

제 1면에는 스크루홀(25)을 형성하고, 표시장치케이스(30)의 대응하는 위치에 미도시된 관통홀을 형성하여 표시장치케이스(30)의 외면쪽에서 스크루(18)로서 체결한다. 또한 힌지아암(20)의 제 2면(22)에도 홀(26)을 형성하고, 액정표시장치

(10)의 측면에는 상기 제 2면의 홀(26)과 대응하는 위치에 스크루홈(19)을 형성하여 스크루(18)로서 서로 체결한다.

한편, 도 12은 도 11의 변형으로서, 표시장치 케이스(30)와 힌지아암(20)의 제 1면(21)을 스크루결합하지 않고 제 1면에 상기 케이스(30)방향으로 플라스틱 후크 즉, 화스너를 형성하고, 케이스에는 화스너고정홈(19a) 즉, 입구가 내부보다 좁은 홈을 형성하고 있어, 스크루 작업없이 그냥 밀어넣음으로써 힌지아암(20)의 제 1면(21)과 케이스(30)가 결합되도록 하고 있다.

본 실시예에서 스크루와 화스너 대신에 못 등을 사용하는 것도 가능하고, 힌지아암에 액정표시장치의 표시부쪽 가장자리를 지지하는 제 3면을 두거나, 힌지아암의 길이가 길게 연장되지 않을 수도 있음은 제 1실시예에서 설명한 바와 같은 것은 물론이다.

【발명의 효과】

이상에서 설명한 바와 같은 본 발명에 따른 컴퓨터와 화상표시장치의 고정방법에 의하면, 기본적으로 화상표시장치와 힌지아암을 케이스측방에서 조립하도록 되어 측면조립방법의 이점인 유효표시영역을 최대화 할 수 있는 잇점을 그대로 살리면서, 힌지아암과 케이스내면, 액정표시장치를 서로 직각 방향에서 각각 서로 고정하고 있으므로 내충격성이 향상되는 이점이 있고, 한 실시예에 따르면 액정표시 측면에 스크루를 채택하지 않고 있으므로 액정표시장치의 박막화에도 대응할 수 있게되는 이점이 있다.

상기에서 설명한 본 발명의 실시예는 단지 예시이며, 본 발명의 정신을 벗어

나지 않고 다양한 변화와 변형이 가능할 것임은 본 발명이 속한 분야의 통상의 지
식인은 알 수 있을 것이다. 예컨대 액정표시장치를 대신하여 여러 가지 다른 평판
표시장치를 사용할 수도 있고, 돌기와 스크루결합, 화스너결합 등은 본 발명에서
모두 동일한 기능이므로 서로간의 혼용될 수 있다.

그러나, 이러한 변화와 변형은 모두 본 발명의 권리범위에 속하게 됨은 첨부
된 특허청구의 범위를 통해 알 수 있을 것이다.

【특허청구범위】

【청구항 1】

시스템 본체와;

상기 본체의 처리결과를 표시하는 표시부와, 배면을 가진 평판표시장치와;

측벽과 내면을 가지고, 상기 평판표시장치를 수용하는 케이스와;

상기 평판표시장치와 본체를 회동가능하게 연결하기 위하여, 힌지마운트와, 상기 힌지마운트에 삽입되어 회동하고, 상기 평판표시장치의 배면과 결합되는 제 1면과, 상기 케이스의 측벽에 결합되는 제 2면을 가진 힌지아암을 구비한 힌지

를 포함하는 휴대용 컴퓨터

【청구항 2】

제 1항에 있어서,

상기 평판표시장치는 액정표시장치인 휴대용 컴퓨터.

【청구항 3】

제 2항에 있어서,

상기 힌지아암의 제 1면과 제 2면은 직각을 이루는 휴대용 컴퓨터.

【청구항 4】

제 2항에 있어서,

상기 힌지아암의 제 1면에는 상기 액정표시장치의 배면을 향한 적어도 하나의 돌기가 형성되어 있고, 상기 액정표시장치의 배면의 대응하는 위치에는 상기 돌기가 고정되는 고정홈이 형성되어 있는 휴대용 컴퓨터.

【청구항 5】

제 4항에 있어서, 상기 돌기는 화스너인 휴대용 컴퓨터.

【청구항 6】

제 4항에 있어서,

상기 힌지아암의 제 2면은 상기 액정표시장치의 측벽과 스크루결합된 휴대용 컴퓨터.

【청구항 7】

제 2항에 있어서,

상기 힌지아암은 상기 액정표시장치의 표시부의 가장자리를 고정시키는 제 3면을 더욱 포함하고 있으며, 상기 제 3면은 상기 제 2면과 수직인 휴대용 컴퓨터.

【청구항 8】

시스템 본체와;

상기 본체의 처리결과를 표시하는 표시부와, 배면을 가진 평판표시장치와;

측벽과 내면을 가지고, 상기 평판표시장치를 수용하는 케이스와;

상기 평판표시장치와 본체를 회동가능하게 연결하기 위하여, 힌지마운트와,

상기 힌지마운트에 삽입되어 회동하고, 상기 케이스의 내면과 결합되는 제 1면과,

상기 평판표시장치의 측벽에 결합되는 제 2면을 가진 힌지아암을 구비한 힌지를 포함하는 휴대용 컴퓨터

【청구항 9】

제 8항에 있어서,

상기 평판표시장치는 액정표시장치인 휴대용 컴퓨터.

【청구항 10】

제 9항에 있어서,

상기 힌지아암의 제 1면은 상기 케이스의 내면쪽으로 스크루결합하고, 상기 힌지아암의 제 2면은 상기 액정표시장치의 측벽과 스크루결합하는 휴대용 컴퓨터.

【청구항 11】

제 9항에 있어서,

상기 힌지아암의 제 1면에는 상기 케이스의 내면을 향한 돌기가 형성되고, 상기 돌기의 위치에 대응하는 케이스에는 홈이 형성되어, 상기 돌기가 홈에 결합되는 휴대용 컴퓨터.

【청구항 12】

제 11항에 있어서,

상기 돌기는 화스너인 휴대용 컴퓨터.

【청구항 13】

시스템본체를 구비하는단계와;

평판표시장치를 구비하는 단계와;

상기 평판표시장치를 수용하기 위하여 측벽을 가진 케이스를 구비하는 단계와;

상기 케이스의 평판표시장치의 배면과 평행한 제 1면과, 상기 케이스의 측벽과 평행한 제 2면을 가진 힌지아암을 구비하는 단계와;

상기 힌지아암이 장착되어 상기 시스템본체와 상기 평판표시장치를 회동시키는 힌

지마운트를 구비하는 단계와;

상기 힌지아암의 제 1면과 상기 평판표시장치의 배면을 결합하는 단계와;

상기 힌지아암의 제 2면과 상기 케이스의 측벽을 결합하는 단계

를 포함하는 휴대용 컴퓨터 조립방법

【청구항 14】

제 13항에 있어서,

상기 평판표시장치는 액정표시장치인 휴대용 컴퓨터 조립방법.

【청구항 15】

제 14항에 있어서,

상기 힌지아암의 제1면에 상기 액정표시장치의 배면을 향한 돌기가 형성되어 있고,

상기 액정표시장치의 배면에는 상기 돌기에 대응하는 홈이 형성된 휴대용 컴퓨터 조립방법.

【청구항 16】

제 14항 또는 제 15항에 있어서,

상기 힌지아암의 제 2면은 상기 케이스의 측벽과 스크루결합하는 휴대용 컴퓨터 조립방법.

【청구항 17】

시스템본체를 구비하는단계와;

평판표시장치를 구비하는 단계와;

상기 평판표시장치를 수용하기 위하여 측벽을 가진 케이스를 구비하는 단계와;

상기 케이스의 평판표시장치의 배면과 평행한 제 1면과, 상기 케이스의 측벽과 평행한 제 2면을 가진 힌지아암을 구비하는 단계와;

상기 힌지아암이 장착되어 상기 시스템 본체와 상기 평판표시장치를 회동시키는 힌지마운트를 구비하는 단계와;

상기 힌지아암의 제 1면과 상기 케이스를 내면방향으로 결합하는 단계와;

상기 힌지아암의 제 2면과 상기 평판표시장치의 측벽을 결합하는 단계

를 포함하는 휴대용 컴퓨터 조립방법

【청구항 18】

제 17항에 있어서,

상기 평판표시장치는 액정표시장치인 휴대용 컴퓨터 조립방법.

【청구항 19】

제 18항에 있어서,

상기 힌지 아암의 제 1면은 상기 케이스와 스크루결합하고, 상기 힌지아암의 제 2면은 상기 액정표시장치의 측벽과 스크루결합하는 휴대용 컴퓨터의 조립방법.

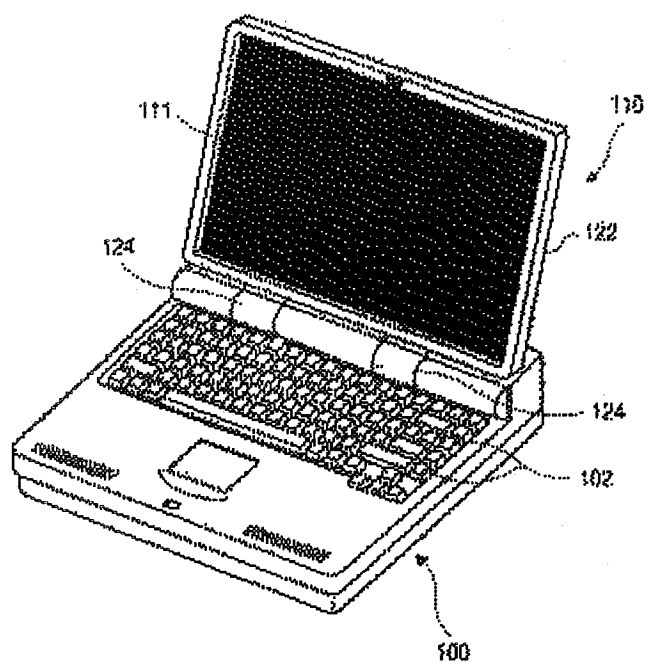
【청구항 20】

제 18항에 있어서,

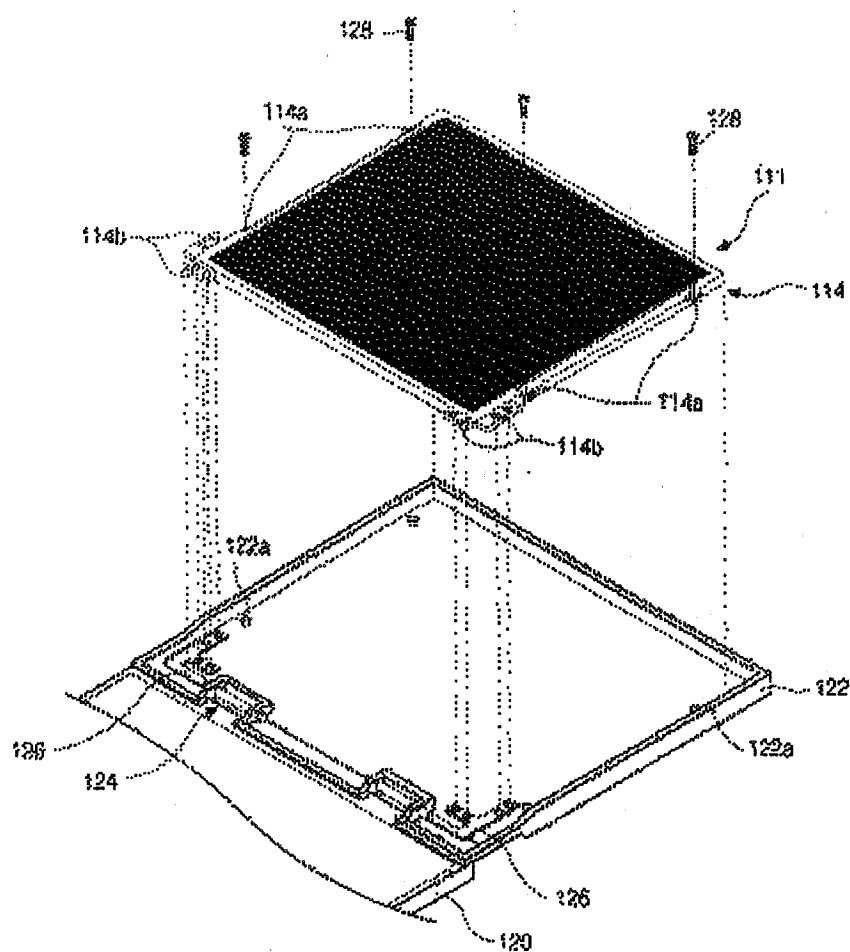
상기 힌지아암의 제 1면은 상기 케이스와 화스너결합하는 휴대용 컴퓨터의 조립방법.

【도면】

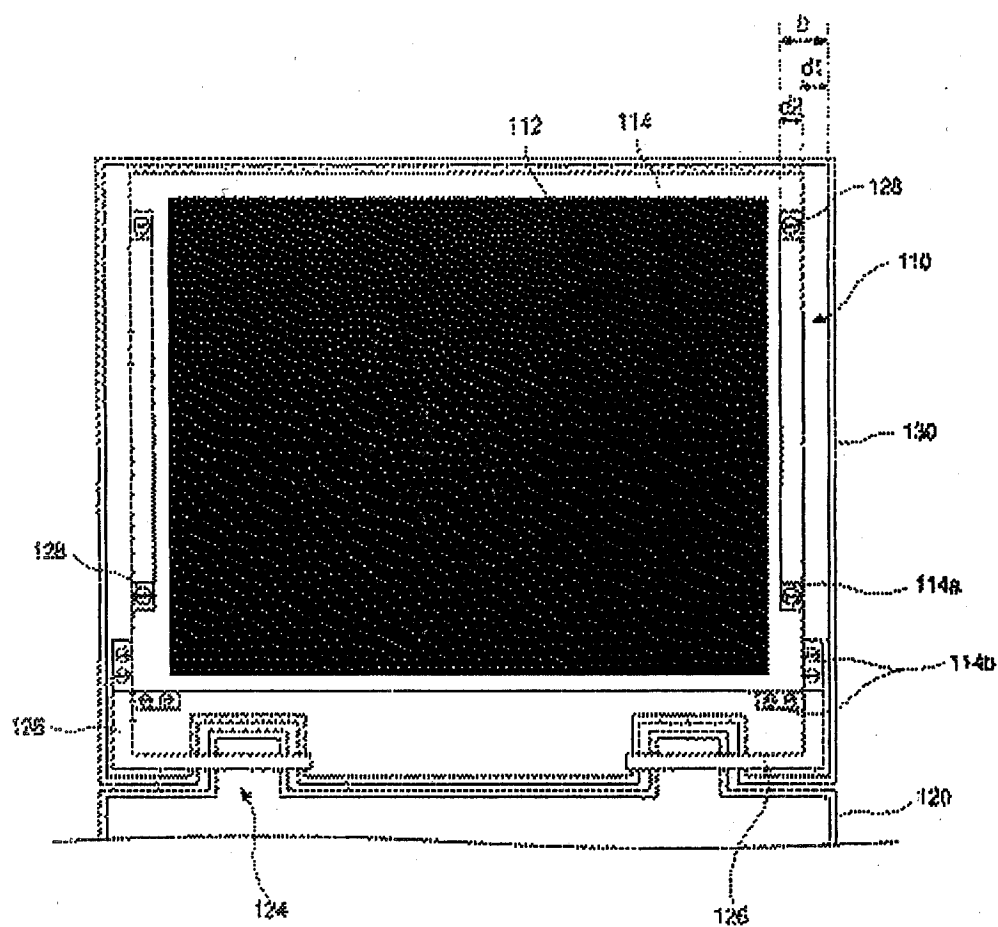
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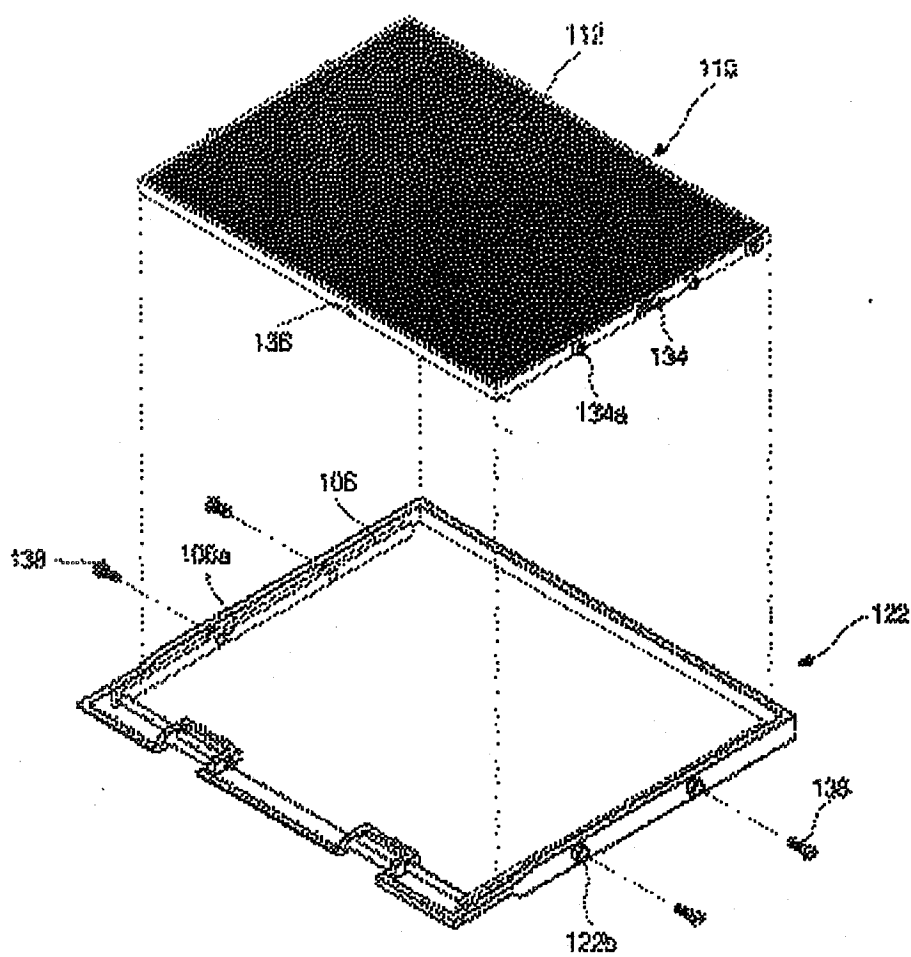
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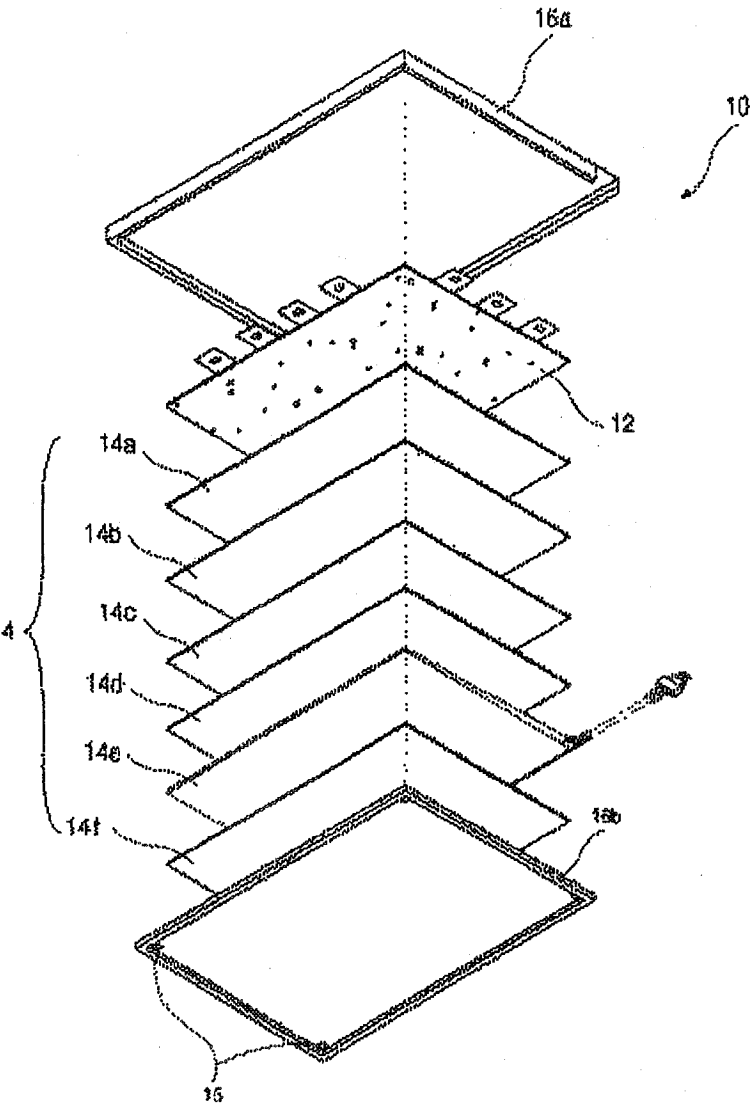
【図 2b】



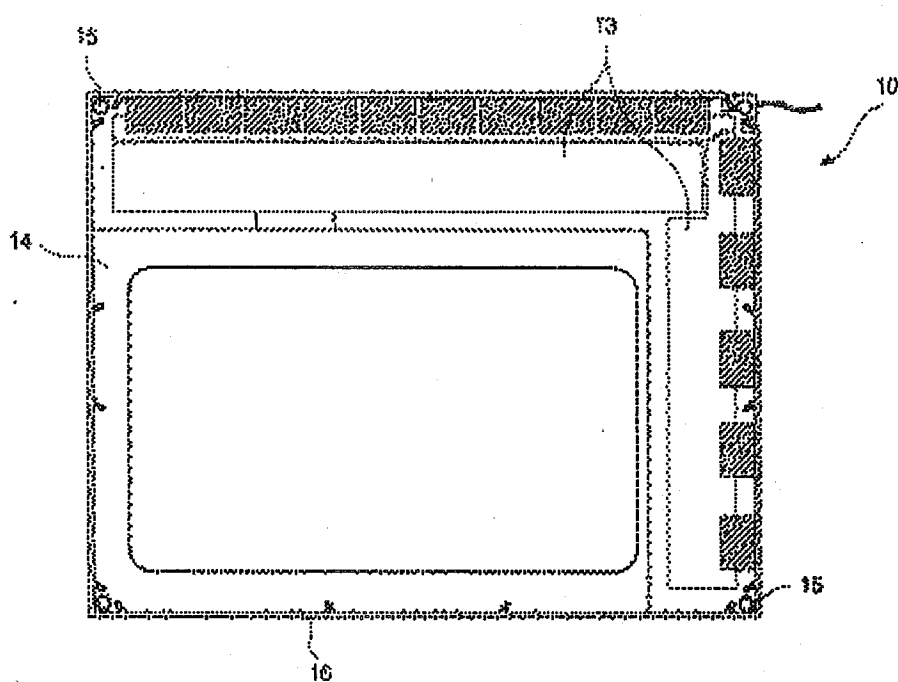
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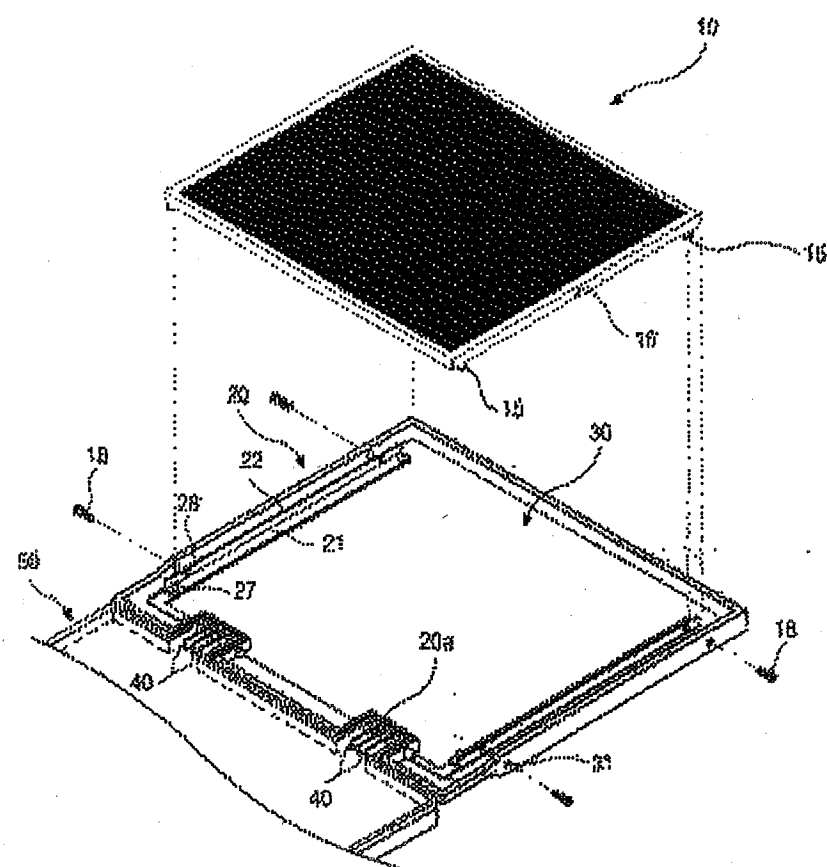
【図 4】



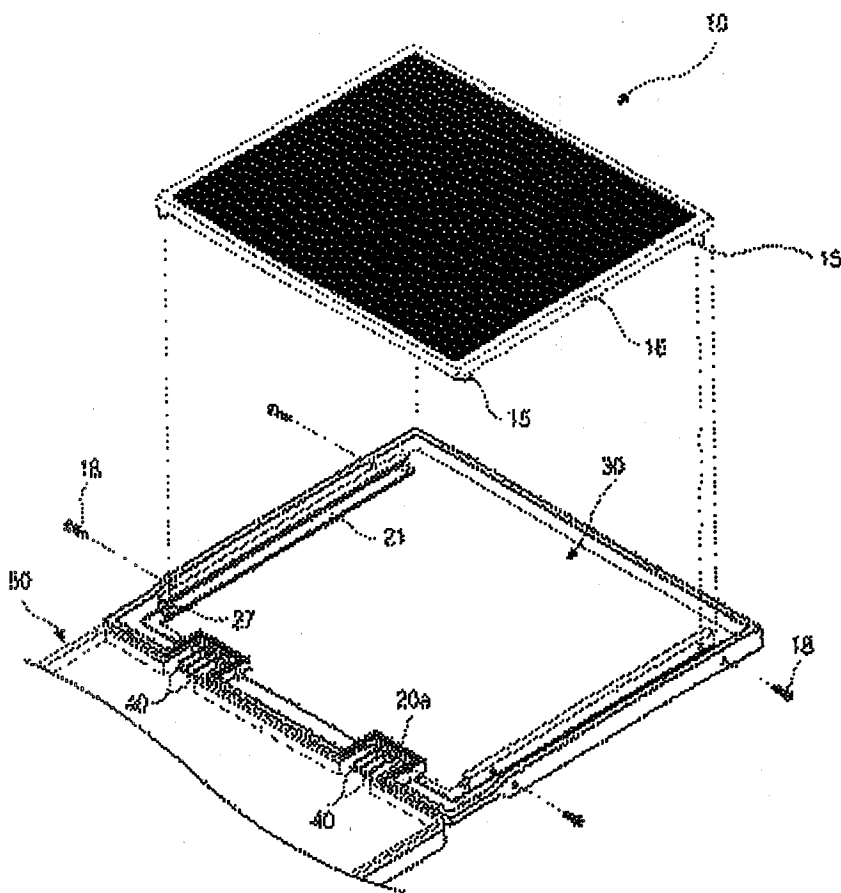
【도 5】



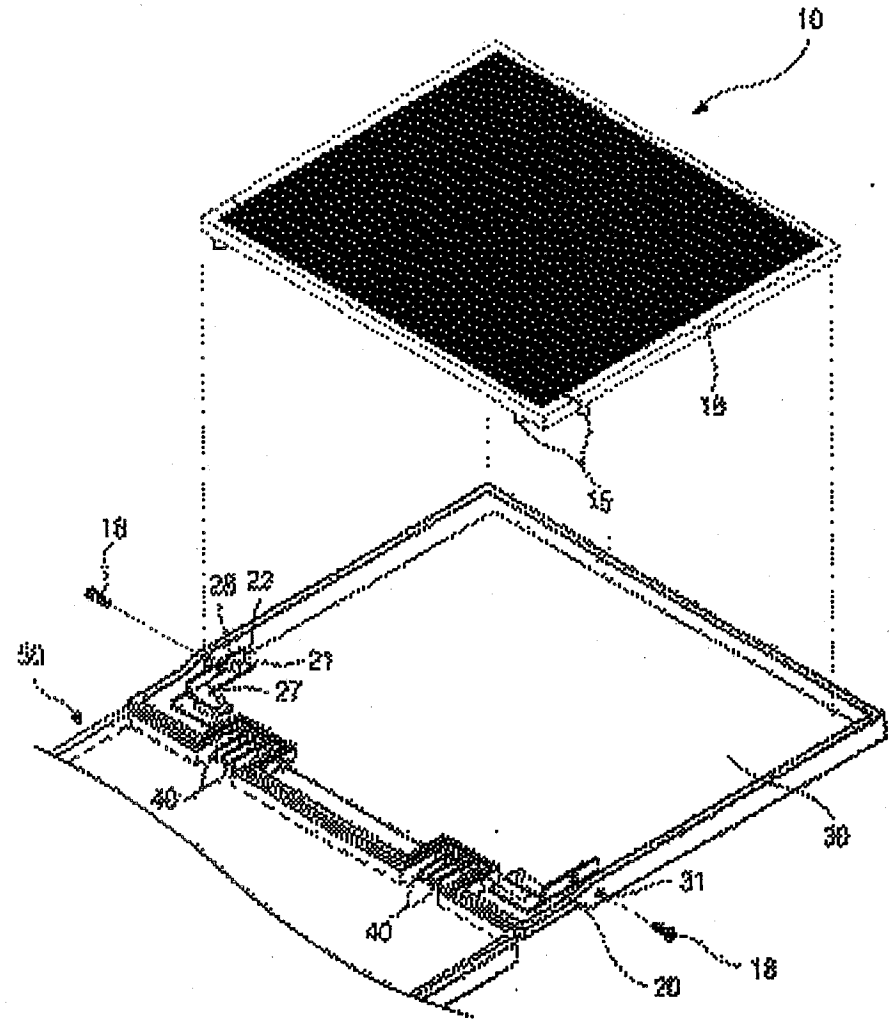
【図 6】



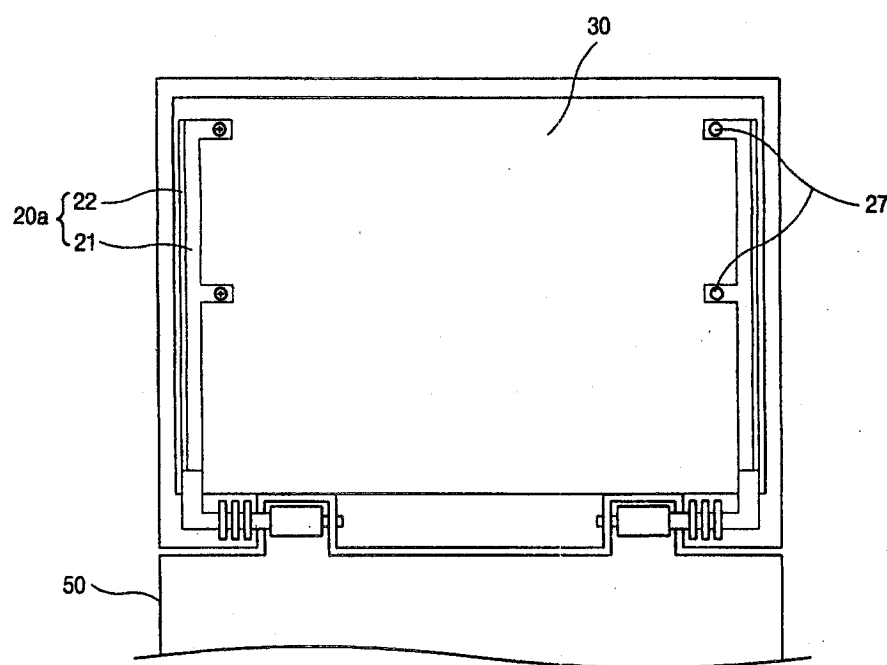
【図 7】



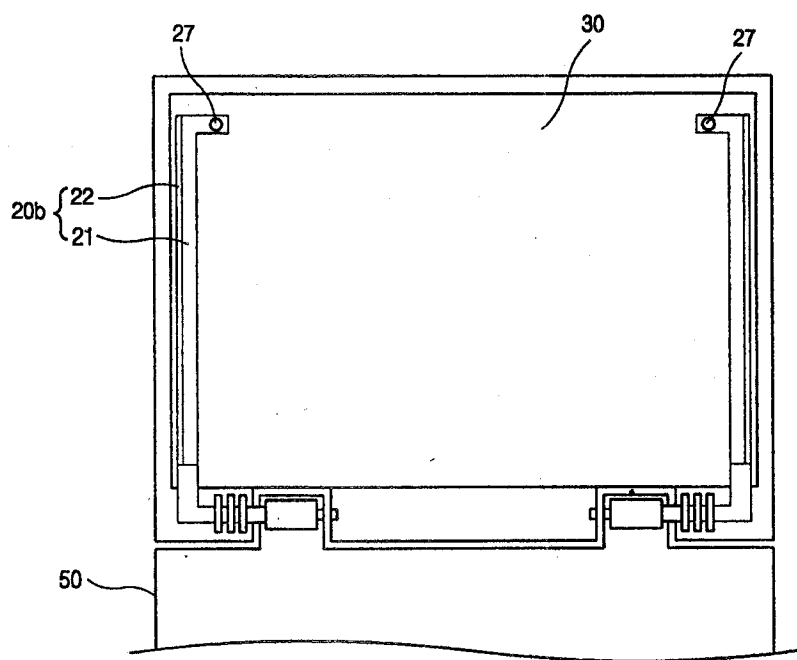
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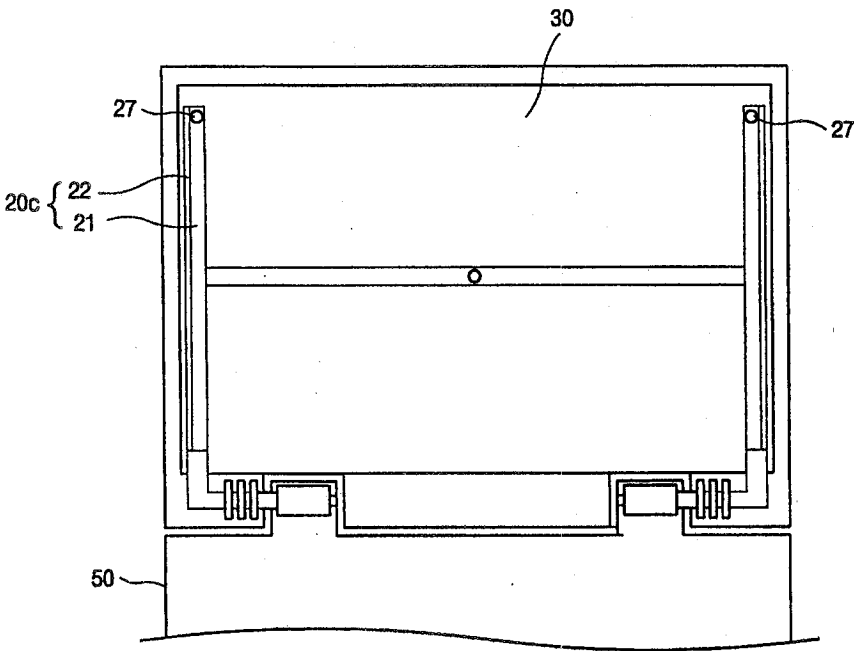
【図 9a】



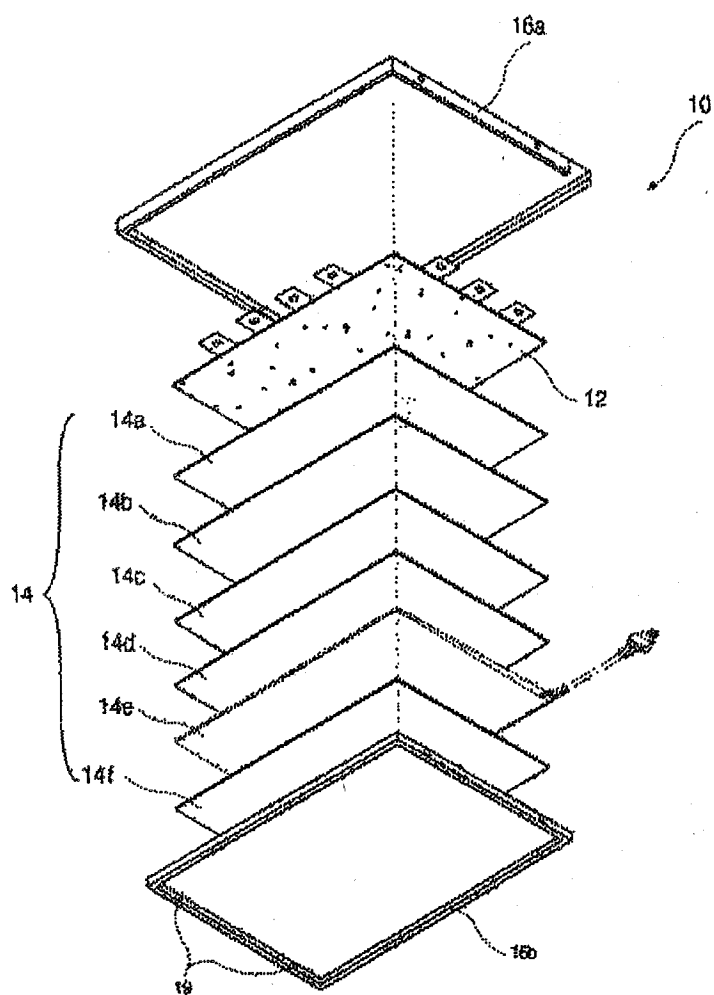
【図 9b】



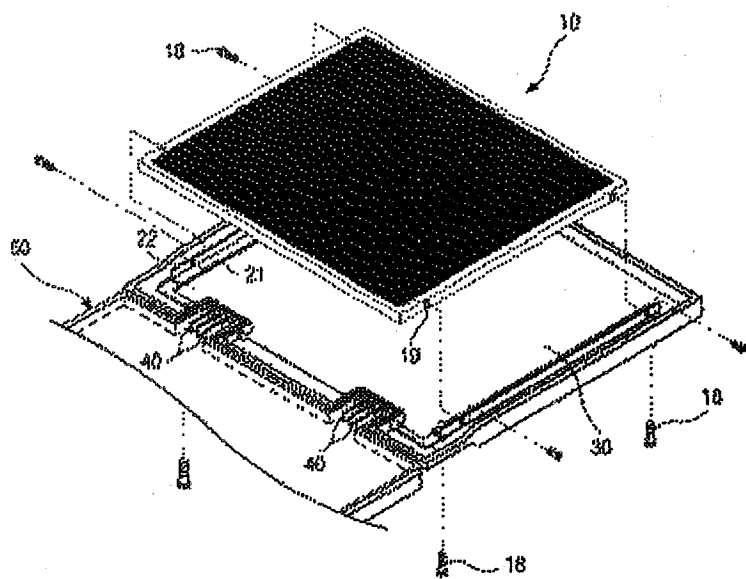
【図 9c】



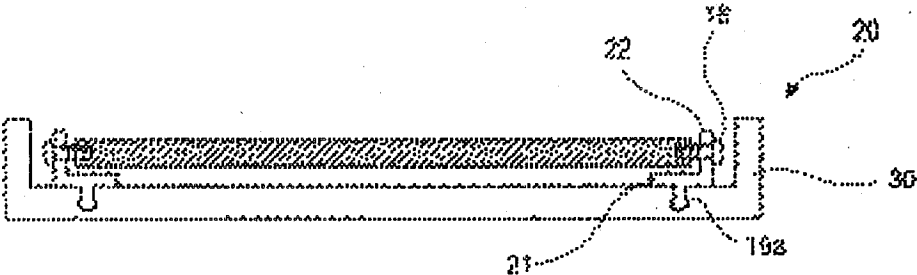
【図 10】



【図 11】



【도 12】



CERTIFICATE OF FILING
37 C.F.R. § 1.8

I hereby certify that this paper is being deposited with the U.S. Postal Service as First-Class Mail, postage prepaid, in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on the date shown below:

Date	Susan F. Mahon
------	----------------

#6

DOCKET NO: 8733.20067

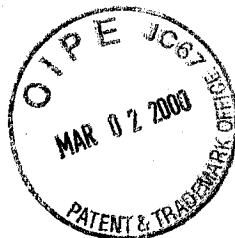
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF:

Young Woo CHO, et al.

SERIAL NO: 09/437,222

FILED: November 10, 1999



: GROUP: 2871

:

:

:

ATTENTION:
Application Division
Customer Corrections

FOR: Portable Computer and Method for Mounting a Flat Panel Display Device Module

REQUEST FOR CORRECTED OFFICIAL FILING RECEIPT

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231

SIR:

The Patent Office is requested to provide a corrected Official Filing Receipt for the attached. If you have any questions, please do not hesitate to contact us. Please make the following corrections, which are marked in red on the copy of the Filing Receipt:

1. Change the name of the third inventor from "JONG WHAN KIM" to JONG HWAN KIM-- and change the city of the third inventor from "KYNOGGI-DO" to --KYONGGI-DO--.

2. Change the title of the invention from "POIRTABLE COMPUTER AND METHOD FOR MOUNTING A FLAT DISPLAY DEVICE MODULE" to --PORTABLE COMPUTER AND METHOD FOR MOUNTING A FLAT DISPLAY DEVICE MODULE--; and

3. Insert the foreign application information:

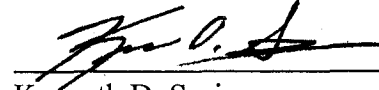
--FOREIGN APPLICATIONS - REPUBLIC OF KOREA, 1998-48265, 11/11/98--.

A copy of the Request for Priority is attached.

In the event that a fee is required, please charge the appropriate amount to our Deposit Account No. 50-0911. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

LONG ALDRIDGE & NORMAN LLP



Kenneth D. Springer
Attorney of Record

701 Pennsylvania Avenue, N.W.
Sixth Floor
Washington, D.C. 20004
Telephone No: (202) 624-1200
Facsimile No: (202) 624-1298

103X
6-99)

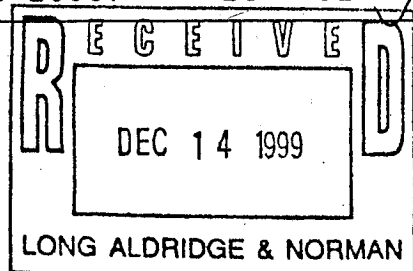
FILING RECEIPT



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
ASSISTANT SECRETARY AND COMMISSIONER
OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTORNEY DOCKET NO.	DRWGS	TOT CL	IND CL
09/437,222	11/10/99	2871	\$1,322.00	8733-20067	14	31	6

LONG ALDRIDGE & NORMAN LLP
701 PENNSYLVANIA AVENUE N W
WASHINGTON DC 20004



Receipt is acknowledged of this nonprovisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Office of Initial Patent Examination's Customer Service Center. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts of Application" ("Missing Parts Notice") in this application, please submit any corrections to this Filing Receipt with your reply to the "Missing Parts Notice." When the PTO processes the reply to the "Missing Parts Notice," the PTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

Applicant(s) YOUNG WOO CHO, KYONGGI-DO, REPUBLIC OF KOREA; DAE HEE PARK, KYONGGI-DO, REPUBLIC OF KOREA; JONG WHAN KIM, KYONGGI-DO, REPUBLIC OF KOREA. H/WAN

Foreign/Per Applications - Republic of Korea

1998-48265 11/11/98

IF REQUIRED, FOREIGN FILING LICENSE GRANTED 12/08/99

TITLE

PORTABLE COMPUTER AND METHOD FOR MOUNTING A FLAT DISPLAY DEVICE MODULE

PRELIMINARY CLASS: 349

DATA ENTRY BY: MARTIN, DIANE

TEAM: 04 DATE: 12/08/99

(See reverse for new important information)

VS078317

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FILE COPY



Bib Data Sheet



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER 09/437,222	FILING DATE 11/10/1999 RULE -	CLASS 349	GROUP ART UNIT 2871	ATTORNEY DOCKET NO. 8733-20067	
APPLICANTS YOUNG WOO CHO, KYONGGI-DO, KOREA, REPUBLIC OF; DAE HEE PARK, KYONGGI-DO, KOREA, REPUBLIC OF; JONG HWAN KIM, KYONGGI-DO, KOREA, REPUBLIC OF; ** CONTINUING DATA ***** ** FOREIGN APPLICATIONS ***** REPUBLIC OF KOREA 1998-48265 11/11/1998 IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** ** 12/08/1999					
Foreign Priority claimed <input checked="" type="checkbox"/> yes <input type="checkbox"/> no 35 USC 119 (a-d) conditions <input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after met Allowance Verified and Acknowledged Examiner's Signature Initials		STATE OR COUNTRY KOREA, REPUBLIC OF	SHEETS DRAWING 14	TOTAL CLAIMS 31	INDEPENDENT CLAIMS 6
ADDRESS LONG ALDRIDGE & NORMAN LLP 701 PENNSYLVANIA AVENUE N W WASHINGTON ,DC 20004					
TITLE PORTABLE COMPUTER AND METHOD FOR MOUNTING A FLAT DISPLAY DEVICE MODULE					
FILING FEE RECEIVED 1322	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit		

LONG ALDRIDGE
& NORMAN^{LLP}
ATTORNEYS AT LAW

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WASHINGTON, D.C. 20004
202 624-1200 • FACSIMILE 202 624-1298

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303 PEACHTREE STREET • SUITE 5300
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404 527-4000 • FACSIMILE 404 527-4198

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#17
25 Apr 2000
R. Talbot

CERTIFICATE OF MAILING

37 C.F.R. §1.8

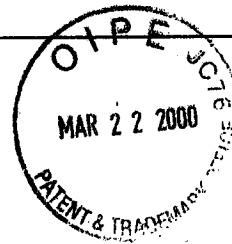
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Date

Susan F. Mahon

DOCKET NO.: 8733.20067

Re: Serial No.: 09/437,222
Applicant(s): Young Woo CHO, et al.
Filing Date: November 10, 1999
For: Portable Computer and Method for Mounting a Flat Panel Display
Device Module
Group Art Unit: 2871



SIR:

Attached hereto for filing are the following papers:

Second Request for Corrected Official Filing Receipt and copy of Official Filing Receipts

Our check in the amount of \$0 is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R. §1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 50-0911. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. §1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

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APR 20 2000

TECHNOLOGY CENTER 2800

LONG ALDRIDGE & NORMAN LLP

Kenneth D. Springer
Attorney of Record
Registration No.: 39,843

CERTIFICATE OF MAILING	
37 C.F.R. §1.8	
I hereby certify that this paper is being deposited with the U.S. Postal Service as First-Class Mail, postage prepaid, in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on the date shown below:	
Date	Susan F. Mahon

DOCKET NO: 8733.20067

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: : GROUP: 2871

Young Woo CHO, et al. :

SERIAL NO: 09/437,222 : ATTENTION:

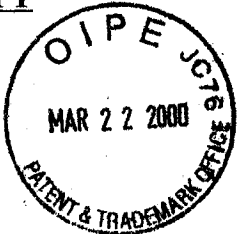
FILED: November 10, 1999 : Application Division

: Customer Corrections

FOR: Portable Computer and Method for Mounting a Flat Panel Display Device Module

SECOND REQUEST FOR CORRECTED OFFICIAL FILING RECEIPT

ASSISTANT COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 20231



SIR:

The Patent Office is requested to again provide a corrected Official Filing Receipt for the attached. If you have any questions, please do not hesitate to contact us. Please make the following corrections, which are marked in red on the copy of the Filing Receipt:

After each inventor and city insert the country --Korea--.

The above information appeared on the original Official Filing Receipt, copy attached.

In the event that a fee is required, please charge the appropriate amount to our Deposit

Account No. 50-0911. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

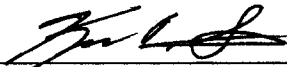
LONG ALDRIDGE & NORMAN LLP

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APR 20 2000

TECHNOLOGY CENTER 2800

701 Pennsylvania Avenue, N.W.
Sixth Floor
Washington, D.C. 20004
Telephone No: (202) 624-1200
Facsimile No: (202) 624-1298


Kenneth D. Springer
Attorney of Record
Registration No. 39,843

file:///c:/APPS/preexam/correspondence/1.htm

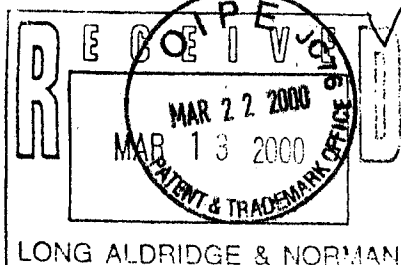
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OC000000004985824

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark OfficeAddress: ASSISTANT SECRETARY AND
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Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLAIMS	IND CLAIMS
09/437,222	11/10/1999	2871	1322	8733-20067	14	31	6

LONG ALDRIDGE & NORMAN LLP
701 PENNSYLVANIA AVENUE N W
WASHINGTON, DC 20004

Date Mailed: 03/08/2000

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Applicant(s)

YOUNG WOO CHO, KYONGGI-DO,
DAE HEE PARK, KYONGGI-DO,
JONG HWAN KIM, KYONGGI-DO

KOREA

KOREA

KOREA

Continuing Data as Claimed by Applicant

Foreign Applications

REPUBLIC OF KOREA 1998-48265 11/11/1998

Foreign filing license granted on 12/08/1999

Title

PORTABLE COMPUTER AND METHOD FOR MOUNTING A FLAT DISPLAY DEVICE MODULE

Preliminary Class

349

Data entry by : MARTIN, DIANE

Team : OIPE

Date: 03/08/2000



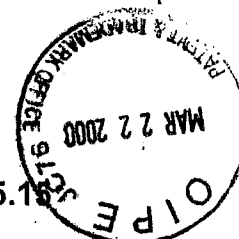
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TECHNOLOGY CENTER 2800

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**LICENSE FOR FOREIGN FILING UNDER
Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.12**

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The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

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The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Office of Export Administration, Department of Commerce (15 CFR 370.10 (j)); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

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PLEASE NOTE the following information about the Filing Receipt:

- The articles such as "a," "an" and "the" are not included as the first words in the title of an application. They are considered to be unnecessary to the understanding of the title.
- The words "new," "improved," "improvements in" or "relating to" are not included as first words in the title of an application because a patent application, by nature, is a new idea or improvement.
- The title may be truncated if it consists of more than 600 characters (letters and spaces combined).
- The docket number allows a maximum of 25 characters.
- If your application was submitted under 37 CFR 1.10, your filing date should be the "date in" found on the Express Mail label. If there is a discrepancy, you should submit a request for a corrected Filing Receipt along with a copy of the Express Mail label showing the "date in."

Any corrections that may need to be done to your Filing Receipt should be directed to:

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Customer Service Center
Washington, DC 20231

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(Rev. 6-99)

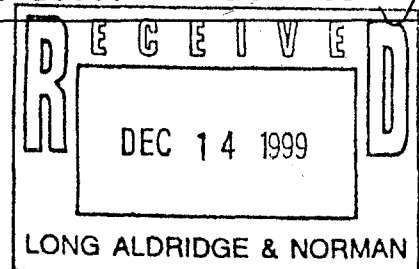
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UNITED STATES DEPARTMENT OF COMMERCE
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Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTORNEY DOCKET NO.	DRWGS	TOT CL	IND CL
09/437,222	11/10/99	2871	\$1,322.00	8733-20067	14	31	6

LONG ALDRIDGE & NORMAN LLP
701 PENNSYLVANIA AVENUE N W
WASHINGTON DC 20004



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Applicant(s) YOUNG WOO CHO, KYONGGI-DO, REPUBLIC OF KOREA; DAE HEE PARK, KYONGGI-DO, REPUBLIC OF KOREA; JONG WHAN KIM, KYNOGGI-DO, REPUBLIC OF KOREA.

IF REQUIRED, FOREIGN FILING LICENSE GRANTED 12/08/99

TITLE

POIRTABLE COMPUTER AND METHOD FOR MOUNTING A FLAT DISPLAY DEVICE MODULE

PRELIMINARY CLASS: 349

RECEIVED

APR 20 2000

TECHNOLOGY CENTER 2800

DATA ENTRY BY: MARTIN, DIANE

TEAM: 04 DATE: 12/08/99

|||||

(See reverse for new important information)

VS078323

LONG ALDRIDGE
& NORMAN^{LLP}
ATTORNEYS AT LAW

701 PENNSYLVANIA AVENUE, N.W. • SUITE 600
WASHINGTON, D.C. 20004
202 624-1200 • FACSIMILE 202 624-1298

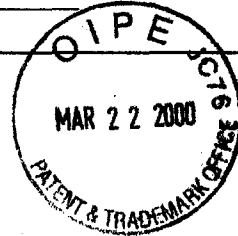
ATLANTA, GA OFFICE
303 PEACHTREE STREET • SUITE 5300
ATLANTA, GA 30308
404 527-4000 • FACSIMILE 404 527-4198

CERTIFICATE OF MAILING
37 C.F.R. §1.8

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Date

Susan F. Mahon



DOCKET NO.: 8733.20067

Re: Serial No.: 09/437,222
Applicant(s): Young Woo CHO, et al.
Filing Date: November 10, 1999
For: Portable Computer and Method for Mounting a Flat Panel Display
Device Module
Group Art Unit: 2871

SIR:

Attached hereto for filing are the following papers:

Second Request for Corrected Official Filing Receipt and copy of Official Filing Receipts

Our check in the amount of \$ 0 is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R. §1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 50-0911. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. §1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

LONG ALDRIDGE & NORMAN LLP

RECEIVED

APR 20 2000

TECHNOLOGY CENTER 2800

A handwritten signature in black ink, appearing to read "Ken D. Springer".

Kenneth D. Springer

Attorney of Record

Registration No.: 39,843



UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
 Washington, D.C. 20231

LK

LT

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/437,222 11/10/99 CHO

Y 8733-20067

LONG ALDRIDGE & NORMAN LLP
 701 PENNSYLVANIA AVENUE N W
 WASHINGTON DC 20004

MM91/0523

EXAMINER

LEA EDMONDS, L

ART UNIT

PAPER NUMBER

2835

DATE MAILED:

05/23/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary**Application No.**

09/437,222

Applicant(s)

CHO ET AL.

Examiner

Lisa Lea-Edmonds

Art Unit

2835

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 November 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8-10, 13-15, 18, 19 and 21-31 is/are rejected.
- 7) ☒ Claim(s) 4-7, 11, 12, 16, 17 and 20 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

Application/Control Number: 09/437,222
Art Unit: 2835

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 8-10, 13-15, 18, 19, and 21-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori et al. in view of Kurihara et al.. With respect to claims 1-3, 8-10, 13-15, 18, 19, and 21-31; Fujimori et al. teaches a portable computer, comprising: a system body (1) having an input device; a liquid crystal display module (13) having a display surface and a rear surface; a display case (2) having a side wall surface; and hinge pivotally coupling the system body to the display module (see for example figures 1, 2, and 8). However, Fujimori et al. lacks a teaching of a hinge frame having a first and second surface as claimed. Kurihara et al. teaches a hinge frame (13) having a first surface coupled to the rear surface of the display module, a second surface coupled with the side wall surface of the display case. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the hinge structure of Kurihara et al. into the LCD of Fujimori et al. as one of many ways of fixing LCD to the system body. With respect to the method claims 18, 19, and 21-31, the method steps as claimed the apparatus of Fujimori et al. in view of Kurihara et al. would teach the method steps as claimed.

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Allowable Subject Matter

1. Claims 4-7, 11, 12, 16, 17, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

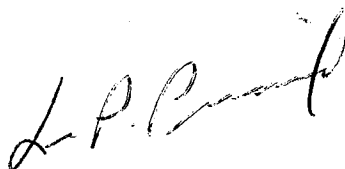
Conclusion

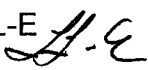
2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please note the hinge structure of Ishihara et al., Esterberg et al., Kim, Gushiken et al. and Yang.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lisa Lea-Edmonds whose telephone number is 703-305-0265. The examiner can normally be reached on 6:30 am to 3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on 703-308-0538. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3431 for regular communications and 703-305-3432 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-1782.



LL-E 
May 18, 2001

Leo P. Picard
Supervisory Patent Examiner
Technology Center 2800

Notice of References Cited	Application/Control No. 09/437,222	Applicant(s)/Patent Under Reexamination CHO ET AL.	
	Examiner Lisa Lea-Edmonds	Art Unit 2835	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number	Date	Name	Classification	
		Country Code-Number-Kind Code	MM-YYYY			
	A	US-005379182-A	01-1995	Fujimori et al.	361	681
	B	US-005946061-A	08-1999	Kurihara et al.	349	58
	C	US-006064565-A	05-2000	Ishihara et al.	361	681
	D	US-005566048-A	10-1996	Esterberg et al.	361	681
	E	US-005872606-A	02-1999	Kim	249	58
	F	US-005844774-A	12-1998	Gushiken et al.	361	681
	G	US-005467504-A	11-1995	Yang	16	342
	H	US- -				
	I	US- -				
	J	US- -				
	K	US- -				
	L	US- -				
	M	US- -				

FOREIGN PATENT DOCUMENTS

*		Document Number	Date	Country	Name	Classification	
		Country Code-Number-Kind Code	MM-YYYY				
	N	- -					
	O	- -					
	P	- -					
	Q	- -					
	R	- -					
	S	- -					
	T	- -					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Form PTO 948 (Rev. 8-98)

U.S. DEPARTMENT OF COMMERCE - Patent and Trademark Office

Application No.

09/437222

NOTICE OF DRAFTSPERSON'S
PATENT DRAWING REVIEWThe drawing(s) filed (insert date) 11/10/99 are:A. ☐ approved by the Draftsperson under 37 CFR 1.84 or 1.152.B. ☒ objected to by the Draftsperson under 37 CFR 1.84 or 1.152 for the reasons indicated below. The Examiner will require submission of new, corrected drawings when necessary. Corrected drawing must be submitted according to the instructions on the back of this notice.1. DRAWINGS. 37 CFR 1.84(a): Acceptable preparation of drawings:
Black ink. Color.☐ Color drawings are not acceptable until permission is granted.
Fig(s) _____
☐ Pencil and non-black ink not permitted. Fig(s) _____

2. PHOTOGRAPHS. 37 CFR 1.84(b)

☐ Each drawing is required. Fig(s) _____
☐ Photographs not properly mounted (must be on metal board or photographic double-weight paper). Fig(s) _____
☐ Poor quality (half-toned). Fig(s) _____

3. TYPE WRITER. 37 CFR 1.84(c)

☐ Paper not suitable, staining, white, and unruled.
Fig(s) _____
☐ Crosses, slanting, oval writings, interline markings, eraser, copy machine marks not accepted. Fig(s) _____
☐ Mylar, vellum paper is not acceptable (to submit).
Fig(s) _____

4. SIZE OF PAPER. 37 CFR 1.84(f): Acceptable size.

☐ 21.0 cm by 29.7 cm (full size A4)
☐ 21.6 cm by 27.9 cm (8 1/2 x 11 inches)
☐ All drawing sheets not the same size.
Fig(s) _____
☐ Drawings sheets not an acceptable size. Fig(s) _____

5. MARGINS. 37 CFR 1.84(g): Acceptable margins

☐ Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm
SIZE: A4 Size
☐ Top 2.5 cm Left 2.5 cm Right 1.5 cm Bottom 1.0 cm
SIZE: 8 1/2 x 11
☐ Margins not acceptable. Fig(s) _____
Top (T) _____ Left (L) _____
Right (R) _____ Bottom (B) _____

6. VIEWS. 37 CFR 1.84(h)

☐ READING: Specification may require revision to correspond to drawing changes.
Fig(s) _____
☐ Partial view. 37 CFR 1.84(b)(2)
☐ Section needed to show figure as one piece.
Fig(s) _____
☐ Views not labeled separately or properly.
Fig(s) _____
☐ Enlarged view not labeled separately or properly.
Fig(s) _____

7. SECTIONAL VIEWS. 37 CFR 1.84 (h)(3)

☐ Hatching not indicated for sectional portions of an object.
Fig(s) _____
☐ Sectional designation should be noted with Arabic or Roman numbers. Fig(s) _____

8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i)

☐ Views do not appear on a horizontal, left-to-right fashion when page is either upright or turned so that the top becomes the right side, except for graphs. Fig(s) _____

9. SCALE. 37 CFR 1.84(k)

☐ Objects not large enough to show mechanism without reducing when drawing is reduced in size to two-thirds in reproduction.
Fig(s) _____

10. CHARACTER OF LINES, NUMBERS, & LETTERS.

37 CFR 1.84(j)

☐ Lines, numbers & letters not uniformly thick and well defined, clean, durable, and black (poor line quality).
Fig(s) _____

11. SHADING. 37 CFR 1.84(m)

☒ Solid black areas pale. Fig(s) _____
☒ Solid black shading not permitted. Fig(s) 1-3, 7-9, 12
☐ Shade lines, pale, rough and blurred. Fig(s) _____

12. NUMBERS, LETTERS, & REFERENCE CHARACTERS.

37 CFR 1.84(p)

☐ Numbers and reference characters not plain and legible.
Fig(s) _____
☐ Figure legends are poor. Fig(s) _____
☐ Numbers and reference characters not oriented in the same direction as the view. 37 CFR 1.84(p)(1)
Fig(s) _____
☐ English alphabet not used. 37 CFR 1.84(p)(2)
Fig(s) _____
☐ Numbers, letters and reference characters must be at least .32 cm (1/8 inch) in height. 37 CFR 1.84(p)(3)
Fig(s) _____

13. LEAD LINES. 37 CFR 1.84(q)

☐ Lead lines cross each other. Fig(s) _____
☐ Lead lines missing. Fig(s) _____

14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.84(t)

☐ Sheets not numbered consecutively, and in Arabic numerals beginning with number 1. Sheet(s) _____

15. NUMBERING OF VIEWS. 37 CFR 1.84(u)

☐ Views not numbered consecutively, and in Arabic numerals, beginning with number 1. Fig(s) _____

16. CORRECTIONS. 37 CFR 1.84(w)

☐ Corrections not made from prior PTO-948 dated _____

17. DRESSING DRAWINGS. 37 CFR 1.152

☐ Surface shading shown not appropriate. Fig(s) _____
☐ Solid black shading not used for color contrast.
Fig(s) _____

COMMENTS

REVIEWER

DATE

3/10/00

TELEPHONE NO.

308-0011

ATTACHMENT TO PAPER NO.